

ABSTRACT OF THE DISCLOSURE

5 A rapid thermal anneal (RTA) chamber having one or multiple openings in a chamber wall and a reflective index monitor in the opening or openings, respectively. The reflective index monitor or monitors each measures the infrared reflective index of the reflector plate of the rapid thermal anneal chamber, and sends a corresponding signal to a process controller, an alarm, or both a process controller and an alarm. In the event that the measured reflective index of the reflector plate deviates from the reflective index of a control, the process controller terminates heating operation of the chamber to prevent damage to the semiconductor wafer in the chamber. The alarm may be activated to alert personnel to the need for immediate replacement of the contaminated reflector plate.